

1 is good news, I mean some optimism. And I think some
2 of this came out of the meeting we had about six weeks
3 ago here on the E911.

4 So I'm hoping that similar progress can come
5 out of today's meeting. That would be terrific.
6 Again, there's two microphones, plus a roving
7 microphone for people who have questions.

8 Let me just start off. I thought Jim made a
9 really important point that if you have to retrofit
10 capabilities it can be very expensive, very difficult,
11 a stranded investment, people's equipment won't work.

12 On the other hand, since in an IP world we
13 are largely working in a world of software where the
14 incremental costs of designing functionality in at the
15 beginning are very low, that, you know, the goal here
16 is, you know, identify what the requirements are,
17 similar to what Nate's been talking about in the E911
18 world.

19 Identify the requirements at the very
20 beginning, design them in from the beginning. If you
21 design them in from the beginning not only are they
22 there, the cost of doing it is greatly reduced.

23 So one of the questions is how do we begin,
24 first of all, how are we doing on that part of the
25 process in terms of designing in capabilities for

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1 disabilities access particularly in Voice Over IP but
2 other IP-enabled services?

3 And what suggestions do you have to identify
4 those requirements and work with the vendors, the
5 equipment designers, the software designers? Jim, why
6 don't you start off?

7 And then, for example, Barry has already
8 designed some things in it. So maybe Barry wants to.

9 MR. TOBIAS: So you just gave me another
10 seven minutes, is that right?

11 DR. PEPPER: No.

12 MR. TOBIAS: Well, again, I would want to
13 emphasize the fact that the purely technological
14 issues are either already solved, or real easy to
15 solve, purely technological.

16 Let me go through, since we haven't -- and
17 I'll just take a minute to do this. Since we haven't
18 heard about visual impairment and blindness barriers
19 to show how the marginal implementation points of
20 these products and services can provide unnecessary
21 accessibility barriers.

22 In order to sign up for a very popular IP
23 service you have to go to a website and, as is very
24 common now, you have to be able to transcribe some
25 numbers from a graphic into a text box.

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1 So the task is you've got a graphic with
2 some kind of hard to read numbers. And they do this
3 to prevent web robots from registering for the
4 service.

5 So it's not actual text, it's an image,
6 okay? And it's a great security technique, but it's
7 completely inaccessible to people who use screen-
8 readers.

9 And this particular implementation would be
10 very hard for someone who is low vision to perform as
11 well. Then when you can actually register for the
12 service, when you download the common client, and I
13 won't be giving out any information if I tell you that
14 the name of this client application includes the
15 letter X, because everything includes the letter X.

16 It is constructed in software out of one
17 single control. So instead of using typical software
18 development practices of, you know, using, let's say
19 in Microsoft, you pull a text box control in there and
20 that's what the person is supposed to type in.

21 This is one completely custom control,
22 completely inaccessible to screen-readers. Also very
23 poor performance for someone who is low vision and
24 using magnification.

25 Keyboard access to this particular

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1 application is very poor. The tab key does nothing.
2 Actually if you tab the right number of times and then
3 use the arrow keys you can, in fact, control the
4 volume of the speaker and the volume of the
5 microphone.

6 But there's no way that you would know that
7 you're doing that. So these are entirely avoidable
8 accessibility barriers that are not essential to the
9 IP network.

10 So, again, it's the information issue. Now,
11 obviously there are probably dozens of screen-reader
12 accessible Voice Over IP residential type clients.
13 But how does the user find out about them?

14 And if the user is an employee, how does the
15 user go to the IT network management security person
16 and get permission to download that one-of-a-kind
17 accessible Voice Over IP client?

18 So that's the barrier more than the
19 standards and the pure technology.

20 DR. PEPPER: Barry did you want to?

21 MR. ANDREWS: I think I can maybe make two
22 points on that. The first is that products such as
23 Packet 8 are software based running on, in our case,
24 Lenox servers.

25 We designed it from the start for ease of

1 use, but also to be extensible and really a platform
2 to make future enhancements easy and simple to deploy.
3 The current Packet 8 is a good example.

4 We started first with the audio adapter. We
5 have added video and things like text, mobile clients,
6 there's a semiconductor companies that are working on,
7 for example, combined GSM and WiFi chip sets that will
8 go into portable both traditional mobile phones as
9 well as mobile VoIP phones.

10 The second point I want to make is that I
11 think awareness is key, especially for small companies
12 like ours. And I think that's where summits like this
13 really help us understand the issues.

14 Once we understand the issues, we can define
15 the problem. And as a technologist, once that is
16 done, once we have a well-defined problem, it is very
17 easy to come up with a solution, especially when it is
18 IP based.

19 That's the easy part. Having everyone agree
20 on that solution, that's the tough part. And that's
21 where standards bodies such as the ITU, IETF,
22 etcetera, are I think doing a very good job.

23 DR. PEPPER: Thank you, Barry. Why don't we
24 open it up for questions?

25 MR. CLARK: Hi, my name is Drew Clark with

1 National Journals Technology Daily. I believe I have
2 a bit of a technical or informational question that I
3 just don't understand.

4 Obviously TTY technology was very important
5 in the old world, the circuit switch world, in getting
6 text through a traditional phone line. But it seems
7 to me now that IP connections, you know, offer text
8 very readily.

9 And I believe there was a comment that text
10 over IP drops characters when you are trying to use
11 TTY over IP type services. I'm not quite sure why
12 we're not just sort of immediately or dramatically
13 moving in the direction of IP based services for
14 people who want to have text in your conversations,
15 just like an email or instant message, or any of those
16 feeds that you get over an IP connection.

17 And so maybe I'm just a little confused as
18 to why TTY is essential going forward in the IP world
19 as opposed to simply having the text that's obviously
20 and immediately available over an IP connection.

21 DR. PEPPER: Claude?

22 PARTICIPANT: It's a very complex question.
23 But in my response you have to remember that for the
24 last 40 years we have been using TTYs, and we have
25 been asking businesses to buy TTYs so that we could

1 communicate with them.

2 And then we had the relay service arise in
3 the 70s and 80s, text relay, so that businesses no
4 longer had to have TTYs, they could call the relay
5 service to contact us.

6 Whether it be a doctor or a hospital, anyone
7 in the public world could contact us via the relay
8 service. But then again, you have to remember access
9 back then was only through TTYs.

10 Today it's true that the world is changing
11 and we have access through all different sorts of
12 technologies, but, again, it takes time for us as
13 consumers to shift from TTY or to not use TTYs at all.

14 It really depends on the efforts of the
15 business community to support us in the use of other
16 technologies. Migration issues need to be discussed
17 more. How does this happen, how can we make it happen
18 in the quickest way possible.

19 DR. PEPPER: Thank you, any other comments?

20 PARTICIPANT: I think this is really
21 important. And I think it might be worthwhile for
22 companies to have this discussion because in the long
23 run it might be very cost-effective if they can do
24 some sort of socially responsible thing to help people
25 migrate, assuming that they want to.

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1 But I think this discussion really needs to
2 happen.

3 DR. PEPPER: So it's a migration question as
4 much as anything else?

5 PARTICIPANT: Yes.

6 DR. PEPPER: A question back here.

7 MS. KELLY-FRYE: Well thank you very much
8 for the seg-way. My name is Brenda Kelly-Frye. And
9 I'm the Director of the Maryland relay. And I also
10 wear another hat, and I am the Chairperson of the
11 Telecommunications Equipment Distribution Program
12 Association, the acronym is TEDPA.

13 We are state administrators who distribute
14 free equipment to individuals who are indigent and
15 cannot afford to purchase their own equipment. I
16 established the program in Maryland approximately six
17 years ago because I, as an interpreter, had noticed
18 that several people were not able to access 911
19 services because they did not have a telephone in
20 their house.

21 The reason they didn't have a telephone in
22 their house was because they needed an adjunct device
23 called a TTY in which to hook up to their standard
24 phone to make a phone call.

25 Their lives were in danger. They were not

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1 able to call 911, they were not able to call their
2 pharmacy to renew their prescriptions. They were not
3 able to call their doctor or the police or fire
4 department.

5 With the movement now into the VoIP arena
6 those people are still going to be left behind. We've
7 got this huge digital divide that's going to be
8 growing, and growing, and growing.

9 Right now, those people who are indigent are
10 able to take advantage of such a program through the
11 telephone companies called Telelife Program, which
12 gives them reduced telephone rates, plus reduced phone
13 calling capacity, you know, they have like 30 free
14 phone calls a month.

15 How are we going to bring these people, who
16 now can't afford to purchase a TTY themselves, can't
17 purchase a computer that gives them access to IP, that
18 gives them access to video relay service, and also
19 provide them with some kind of a connectivity with a
20 high speed?

21 How are we going to be able to do that? Are
22 we going to be able to apply such a program such as
23 Telelife to this for high speed connectivity so that
24 they can have equal access to the wonderful features
25 of IP that we all are able to enjoy because we all

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1 have good jobs?

2 DR. PEPPER: Good question. Thank you.

3 PARTICIPANT: In line with this line of
4 discussion, I just wanted to point out that the FCC
5 has granted a waiver. I think they have four years
6 left for the IP text relay and the VRS not to have to
7 handle 911 calls because of the same kinds of problems
8 that Nate was talking about, locating people, and
9 validating, and so on.

10 If we're going to have a lot of migration in
11 the next four or five years this could become a
12 serious problem. Some of my students at Galludet have
13 abandoned -- the people don't have a lot of money and
14 they are early adopters.

15 And they are abandoning phone lines, don't
16 have a way to get access to 911 at all. So I think
17 that's a policy issue that needs to be looked at again
18 perhaps.

19 And the relay companies need to be
20 encouraged to work perhaps with NENA and others to fix
21 the problem for that area. Bruce I wanted to ask you,
22 you had mentioned about text in your product.

23 And I wonder if you have it in the current
24 generation, or is that in the planning stages?
25 Because text we think of as something that has kind of

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1 a low overhead medium when you have multimedia.

2 And you have some familiarity with the deaf
3 community, so I'm going to embarrass you with that
4 comment.

5 MR. ANDREWS: I think the question was for
6 me?

7 DR. PEPPER: Yes, Barry.

8 MR. ANDREWS: We have had a previous line of
9 products that worked over with the H.324 standard,
10 which is basically modem based, trying to send
11 everything over a modem connection.

12 And that did have an accessory port for
13 text. And it is something that we are aware of. I
14 think in our case, we are a small company. We have
15 been fortunate, I think, to have employees that cared
16 about these issues.

17 And so it is something that we are working
18 on.

19 DR. PEPPER: Thank you. Another question?

20 MS. STEWART: Hi, I am Pam Stewart from
21 Maryland. I have a question, I guess it is mostly
22 directed to everybody, but Nate in particular. In
23 your one paradigm you said that, you know, we have to
24 sort of shift towards things like SMS and two-way
25 paging, and that kind of stuff.

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1 And I know that I personally am terrified
2 that I know so many of the deaf people that I know
3 that have given up their telephone lines. And they
4 are depending solely on two-way pagers.

5 Now, if that person has gone off the car
6 into a ditch, I know very many times I have sent a
7 two-way page and it doesn't get to somebody else for
8 three hours, or maybe the next day if everything is
9 overload.

10 And it terrifies me that a lot of the
11 companies that have the two-way pagers are encouraging
12 people saying, you know, you can call directly to 911
13 on this, without any of those warnings.

14 And I think we are setting up for some
15 really bad problems here.

16 MR. WILCOX: First, we do recognize as part
17 of the requirements process some of the limitations of
18 the new paradigms of communication, two-way paging
19 being one of them.

20 We haven't set in stone an adoption of how e
21 are going to handle those yet. And it's exactly those
22 issues that are creating some of the delay in quicker
23 adoption.

24 We do have a fairly good cross-section of
25 folks working on that issue as well. So I guess the

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1 answer I have for you is right now I don't have an
2 answer.

3 We don't have a way of accepting that type
4 of messaging. We are looking at the limitations and
5 developing the requirements based on those limitations
6 and hopefully pushing the manufacturers and the
7 support companies for those devices to be able to
8 recognize that they will be used for emergency
9 signaling, and to improve the ability of those devices
10 in that regard. So, thank you.

11 MS. STEWART: Thank you. But, like what Jim
12 said, I think this needs to be stressed too, that it's
13 organizational too. And I think it is incumbent upon
14 these companies to have more reasonable advertising
15 and don't tell people that this is going to get you to
16 a 911 center.

17 DR. PEPPER: Thank you.

18 MR. LUCAS: Fred Lucas, FAL Associates. And
19 I'm also the Chairman of TIA 30. Just a bit of
20 information kind of addressing some of what Nate had
21 put up on his 911 fly as far as TTY over IP
22 connections, etcetera.

23 As was mentioned in the first panel by
24 Gunnar Hellstrom and Paul Jones, a lot of work is
25 taking place in the standards area on that.

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1 Internationally, as was pointed out, to cover all
2 forms of text devices in the ITU, but also within the
3 U.S. working in conjunction with the ITU group.

4 With are working with NTR 30 developing a
5 standard that will transport the Baudot device
6 information reliably, reliable transport across IP
7 connections, where you do have packet loss and lower
8 quality of service.

9 Right now we are scheduled to have that
10 completed in August of this year. So just as a bit of
11 information, it's going to be called TIA 1001. The
12 international work also addresses the fact that there
13 is known packet loss in the network, and provide
14 reliable transport of TTY and such devices over the
15 network where you are going between PSTN through IP,
16 back to PSTN, etcetera.

17 DR. PEPPER: Thanks Fred. We have two more
18 people, unless there's anybody else that wants to get
19 in line. We will take these as our two questions
20 before the next break.

21 MS. MARVENEY: Hi, I am Dana Marveney, the
22 Director of the National Center for Hearing Assistive
23 Technology for hard-of-hearing people. The one thing
24 I would like to point out is that if the multimedia
25 conferencing software had the ability to work with the

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1 speech recognition software often available on many
2 user computers this would be a way of cutting down
3 cost because it might not be necessary to use relay
4 services.

5 And so I would really like to encourage
6 everyone to think about building in hooks to the
7 speech recognition modules on computers because I
8 think that would be a very good way of providing
9 access.

10 Many people cannot type very well. So,
11 again, I think this would be something to explore.

12 DR. PEPPER: That's great. Thank you. Does
13 anybody on the panel have any insights into that, or
14 have a sense of where some of those, you know, speech
15 recognition program are in terms of implementation?

16 No? Well then maybe that's something that
17 other people during the break can raise or talk to you
18 about.

19 MR. DANIELS: As a deaf individual I will be
20 using the interpreter. My name is Paul Daniels, I am
21 representing myself. There was one woman who made a
22 very good point about if you're in a car accident, how
23 do you contact 911.

24 Is there any way we could include maybe GPS
25 systems? I know many of the new cars being produced

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1 already have built-in GPS systems. It seems like
2 somehow we should be able to create devices where a
3 signal could be sent straight up to a satellite,
4 whether it be a mobile device, or my computer, or
5 whatever.

6 It could shoot up to a satellite and people
7 would know where I am, regardless of how hurt I have
8 become. And then I could be brought to the correct
9 emergency center to be helped.

10 That was just a comment I wanted to add,
11 thank you.

12 DR. PEPPER: Thank you. In fact, Nate may
13 want to respond to that.

14 MR. WILCOX: Well, the good news is that
15 that's already there. For wireless, for cellular
16 calls the process to enable that is already there. In
17 fact, about 20 percent of the country's 911 system now
18 is at a point where they are able to accept the geo
19 information associated with a cell phone that dials
20 911.

21 As long as the device, like your OnStar or
22 your ATF system in your car uses the cellular network
23 and you happen to be in a location where the 20
24 percent falls, then you most likely will get located.

25 However, other technologies, two-way pagers,

1 things of that nature, they are not there currently.
2 So those are some of the things we have to look at.
3 So thank you very much.

4 DR. PEPPER: Nate's making another really
5 good point, I think, which is something that came out
6 at the E911 Solutions Summit, and that is that as we
7 moved, for example, to location based mobile systems,
8 the capabilities and technologies are there.

9 A real issue at this point is implementation
10 by the PSAPs and the funding problems that PSAPs have
11 as local and state government entities having funding
12 problems.

13 So I think that it's important to recognize
14 that. And if we believe, you know, as a society and
15 country that these are things that are important then
16 we're going to have to step up and make the financial
17 commitment to converting and proving opportunities for
18 PSAPs to take advantage of the new technologies.

19 I think we have time for about an eight
20 minute break. Then we will move into the next panel.
21 Dane's folks and June in particular have really kept
22 us on a forced march through a lot of really good
23 substance.

24 I just want to thank the panel first, and
25 the questioners.

1 (Whereupon, the above-entitled matter went
2 off the record at 11:51 a.m. and went back on the
3 record at 12:02 p.m.)

4 DR. PEPPER: Hello. Could we try to sit
5 down and get started? We are competing with the food
6 again, but I think if our panelists could come up and
7 be seated.

8 Thank you very much. I have the privilege
9 of introducing another one of our Commissioners,
10 Commissioner Michael Copps. Commissioner after with
11 reconvene here, we have been having several panels.

12 If people get settled I appreciate your
13 being here. Commissioner?

14 COMMISSIONER COPPS: Good afternoon, it
15 doesn't bother me if folks are still eating over
16 there. Please go ahead and do so. Let me apologize
17 for my voice.

18 I am fighting kind of a bad cold. I promise
19 not to get too close to infect everybody. But I am
20 pleased to see you all here. And I thank you for the
21 opportunity to come by for just a few minutes.

22 More importantly, I wanted to come by to
23 thank you for sharing your time and your talent in
24 what I hope has been, and will continue to be, a
25 productive dialogue, productive both for you and for

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1 the Commission.

2 And finally, I wanted to commend Chairman
3 Powell and the Consumer and Governmental Affairs
4 Bureau for bring us together today. This is just the
5 kind of outreach I like to see this Commission of ours
6 have on the whole range of technology issues that
7 confront us.

8 There's noting that comes close to getting
9 out and sharing information with the many groups that
10 are so much affected by the decisions we make around
11 here.

12 Last year about this time I was a guest over
13 at Galludet University's celebration of the 15th
14 Anniversary of the deaf President. And I spent some
15 time with the President of that institution, King
16 Jordan, and attended some classes, and was able to
17 speak with some of the students and professors.

18 And it was a terrific day on a beautiful
19 campus. But what stays with me most about that visit
20 was the incredible enthusiasm that people there had
21 for all the new technology that was coming there way,
22 and the almost seamless way that many of them seemed
23 to be incorporating it into their lives.

24 And I went away from there with the idea
25 that, you know we talk so much about the early

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1 adopters in silicone valley and their enthusiasm and
2 all that.

3 I don't think they have anything on the
4 techno-savvy that the disabilities community has. And
5 I was just so proud to see that. And that's why
6 today's dialogue is so important.

7 I know you are talking about VoIP. That's
8 not just a hot topic around the halls of the Federal
9 Communications Commission, but I think it's going to
10 be really a vital feature of our communications
11 future.

12 And I think it may end up being truly a
13 transformative thing if we get it done right. The
14 possibilities are so great for customized services and
15 fusing voice and data and video onto internet based
16 networks.

17 But there are a lot of challenges that
18 accompany them. That's what we are trying to wrestle
19 with here at the FCC right now. But chief among them
20 is making sure that IP services like this are
21 accessible to everyone.

22 It's the right thing to do. And it is also
23 the legal mandate that we have. When congress passed
24 the Americans With Disabilities Act, more than 13
25 years ago, it directed the FCC to do everything we

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1 could to ensure that those with disabilities have
2 access to functionally equivalent services so that all
3 of our citizens can participate fully in our society.

4 So that's what we need to put front and
5 center. Let's be certain we do everything we can to
6 ensure that we live up to the mandate of functional
7 equivalency as IP services flood the communications
8 landscape.

9 I know that term, functional equivalency, is
10 so bureaucratic, and legalistic, and antiseptic. But
11 if we stop and think about it, what it really
12 translates into is equal opportunity, and the
13 opportunity to lead productive lives, and to
14 communicate, and to educate yourself, and others, and
15 to have a good job, and so much, much more.

16 It is a huge challenge. And that's a
17 challenge that we have to both meet and master. And
18 we've got a long way to go in doing it. We have to
19 wrestle with some hard questions.

20 This Commission has been on a forward march,
21 as some of you know, to re-classify the
22 telecommunication services under our jurisdiction, to
23 re-classify many of them as information services.

24 We need to get a much better handle on what
25 that means for persons with disabilities. And I'm not

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1 convinced that it bows particularly well for people
2 with disabilities.

3 Frankly, as many of you probably know, I am
4 worried that this re-classification could cause many
5 more problems than it resolves, if it resolves any.
6 We also have to build on the TRS options we have today
7 that already involve IP platforms.

8 IP relay has been eligible for TRS
9 reimbursement for about two years now. So you have
10 been ahead of the curve in the disabilities community
11 in coming to use IP services to communicate.

12 But we need to ask now how broadband
13 deployment impacts IP relay use and what more we can
14 do to ensure that the disabilities communities have
15 access to the bandwidth they need to use this internet
16 based alternative to TTY.

17 We also are overdue for getting our policy
18 on VRS compensation right. And I imagine you are
19 talking about that today. And it is time for a frank
20 discussion of the benefits of making it a required
21 form of TRS.

22 And I am really hopeful that the Commission
23 can get this teed up in the relatively near future.
24 So there's a mountain of challenges out there. But it
25 is through dialogues like this I think where we can

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1 really tackle these things and make a contribution.

2 So my advice to you is tackle these tough
3 issues, figure who else needs to be a part of this
4 dialogue, reach out to anybody else who needs to be a
5 part of this dialogue, and see if we can't tackle
6 these questions together.

7 So I won't detain you further today. But I
8 just did want to come by and welcome you, tell you how
9 appreciative I am for the efforts that you're making
10 to help us shape policy here at the Commission.

11 I think all of you know, I hope you know,
12 that my door is always open to you, and I look forward
13 to working with you on all of these challenges. Thank
14 you very much, and good luck.

15 DR. PEPPER: Thank you Commissioner Copps.
16 Jeff Carlisle, my co-Director of the IP Working Group
17 is going to moderate the third panel. Jeff?

18 PANEL THREE

19 MR. CARLISLE: Thank you, very much Bob.
20 This panel is going to focus on the regulatory
21 implications of what we have been talking about. And
22 it is really designed to give us an opportunity to
23 talk about what does the regulatory environment look
24 like in order to ensure that we overcome the
25 difficulties posed by the migration to IP technologies

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